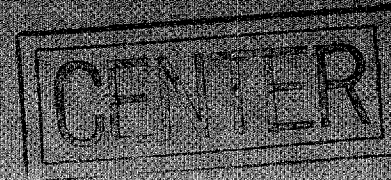


YAMAHA T-80

*Natural Sound AM/FM Stereo Tuner
Super-precision Digital Fine Tuning (0.01 MHz steps)
5-Way Station Status Memory, 10-Station Random Access Preset Tuning
New Computer Servo Lock Tuning System
New FM Front End with Zero IM Mixer*



OWNER'S MANUAL



Thank you for purchasing the YAMAHA T-80 AM/FM stereo tuner.

CONTENTS

| | |
|---|-----|
| CAUTION: READ THIS BEFORE OPERATING YOUR T-80 | 1/2 |
| CONNECTION DIAGRAM | 3 |
| CONNECTIONS | 4 |
| FRONT PANEL PARTS AND FUNCTIONS | 5 |
| MULTIPATH INTERFERENCE | 7 |
| RECEIVING FM/AM BROADCASTS | 7 |
| SPECIFICATIONS | 9 |
| TROUBLESHOOTING | 10 |

IMPORTANT!

Please record the serial number of your unit in the space below:

Model: **T-80**

Serial No.:

The serial number is located on the rear of the chassis.

Retain this Owner's Manual in a safe place for future reference.

WARNING

To prevent fire or shock hazard, do not expose this appliance to rain or moisture.

CAUTION (PREPARED IN ACCORDANCE WITH UL STANDARD 1270)

- 1** Read Instructions — All the safety and operating instructions should be read before the appliance is operated.
- 2** Retain Instructions — The safety and operating instructions should be retained for future reference.
- 3** Heed Warnings — All warnings on the appliance and in the operating instructions should be adhered to.
- 4** Follow Instructions — All operating and other instructions should be followed.
- 5** Water and Moisture — The appliance should not be used near water — for example, near a bathtub, washbowl, kitchen sink, laundry tub, in a wet basement, or near a swimming pool, etc.
- 6** Carts and Stands — The appliance should be used only with a cart or stand that is recommended by the manufacturer.
- 7** Wall or Ceiling Mounting — The appliance should be mounted to a wall or ceiling only as recommended by the manufacturer.
- 8** Ventilation — The appliance should be situated so that its location or position does not interfere with its proper ventilation. For example, the appliance should not be situated on a bed, sofa, rug, or similar surface that may block the ventilation openings; or placed in a built-in installation, such as a bookcase or cabinet that may impede the flow of air through the ventilation openings.
- 9** Heat — The appliance should be situated away from heat sources such as radiators, stoves, or other appliances that produce heat.
- 10** Power Sources — The appliance should be connected to a power supply only of the type described in the operating instructions or as marked on the appliance.

11 Power-Cord Protection — Power-supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plugs, convenience receptacles, and the point where they exit from the appliance.

12 Cleaning — The appliance should be cleaned only as recommended by the manufacturer.

13 Nonuse Periods — The power cord of the appliance should be unplugged from the outlet when left unused for a long period of time.

14 Object and Liquid Entry — Care should be taken so that objects do not fall into and liquids not spilled into the inside of the appliance.

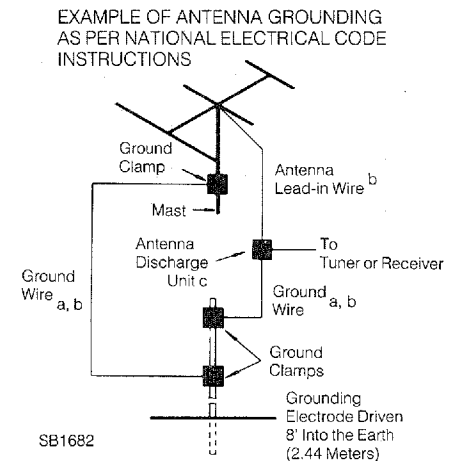
15 Damage Requiring Service — The appliance should be serviced by qualified service personnel when:

- A. The power-supply cord or the plug has been damaged; or
- B. Objects have fallen, or liquid has been spilled, into the appliance; or
- C. The appliance has been exposed to rain; or
- D. The appliance does not appear to operate normally or exhibits a marked change in performance; or
- E. The appliance has been dropped, or the cabinet damaged.

16 Servicing — The user should not attempt to service the appliance beyond those means described in the operating instructions. All other servicing should be referred to qualified service personnel.

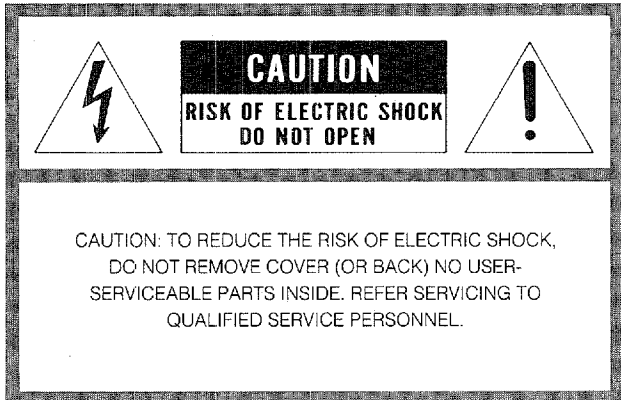
17 Power Lines — An outdoor antenna should be located away from power lines.

18 Outdoor Antenna Grounding — If an outside antenna is connected to the tuner, be sure the antenna system is grounded so as to provide some protection against voltage surges and built up static charges. Section 810 of the National Electrical Code, ANSI/NFPA No. 70 — 1981, provides information with respect to proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna discharge unit, size of grounding conductors, location of antenna-discharge unit, connection to grounding electrodes, and requirements for the grounding electrode.

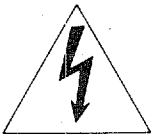


- a. Use No. 10 AWG (5.3 mm²) copper, No. 8 AWG (8.4 mm²) aluminum, No. 17 AWG (1.0 mm²) copper-clad steel or bronze wire, or larger, as ground wire.
- b. Secure antenna lead-in and ground wire to house with stand-off insulators spaced from 4 feet (1.22 meters) to 6 feet (1.83 meters) apart.
- c. Mount antenna discharge unit as closely as possible to where lead-in enters house.

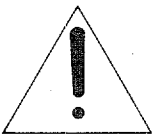
T-80



• Explanation of Graphical Symbols



The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert you to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert you to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

CAUTION: READ THIS BEFORE OPERATING YOUR T-80

1

The T-80 is a sophisticated AM/FM stereo tuner. To ensure proper operation for the best possible sound reproduction, please read this manual carefully.

2

Choose the installation location of your T-80 carefully. Avoid placing it in direct sunlight or close to a source of heat. Also avoid locations subject to vibration and excessive dust, heat, cold or moisture.

3

Do not open the cabinet as this might result in damage to the set, or electrical shock. If a foreign object should get into the set, contact your dealer.

4

To prevent lightning damage, pull out the power cord and remove the antenna cable during an electrical storm.

5

When removing the power plug from the wall outlet, always pull directly on the plug; never yank the cord.

6

Do not use force when using the switches or knobs.

7

When moving the set be sure to first pull out the power plug and remove cords connecting to other equipment.

8

Do not attempt to clean the T-80 with chemical solvents as this might damage the finish. Use a clean, dry cloth.

9

Be sure to read the "troubleshooting" section for advice on common operating errors before concluding that your T-80 is faulty.

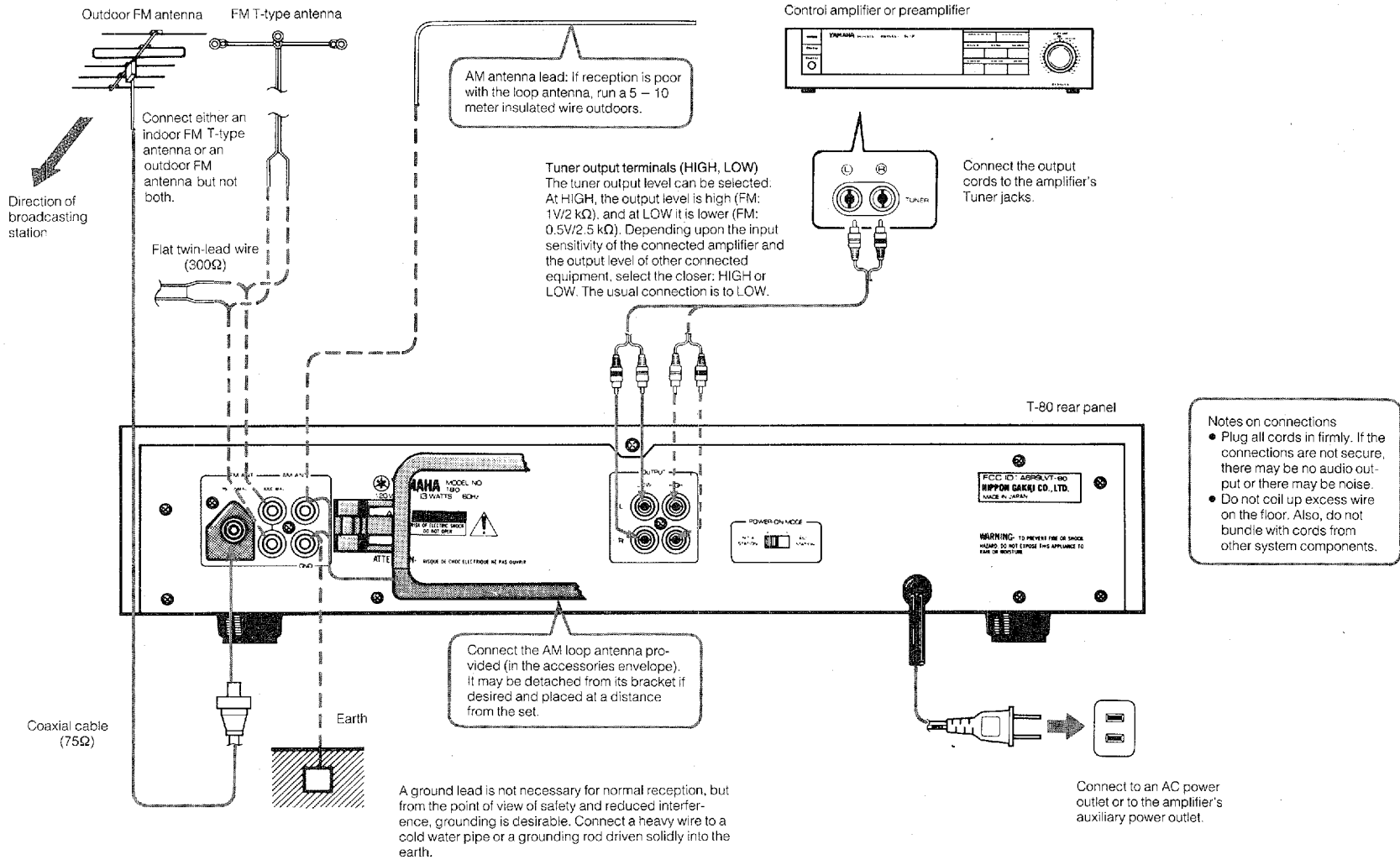
10

Keep this manual in a safe place for future reference.

T-80

CONNECTION DIAGRAM

Be sure to turn the power OFF before making connections, and connect the left (L) and right (R) channels consistently from component to component.

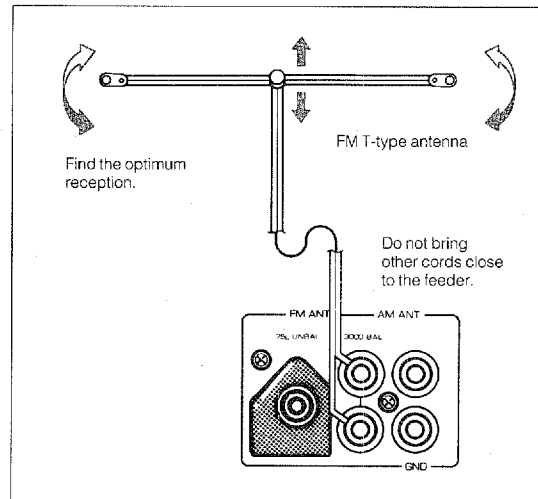
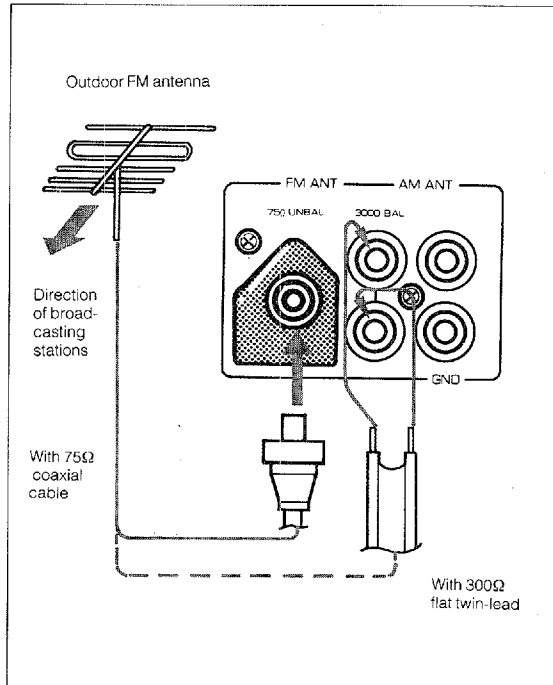


CONNECTIONS

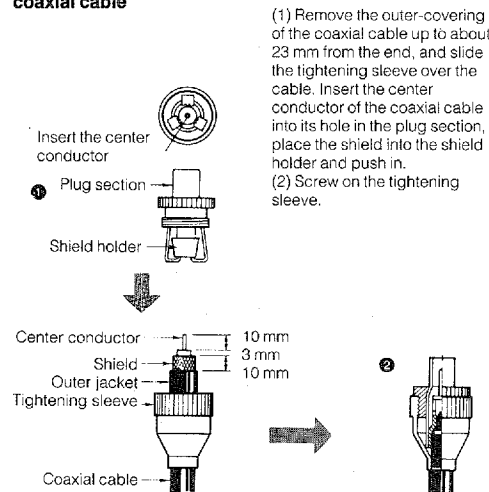
CONNECTING THE FM ANTENNA

Choose an FM antenna that is appropriate to the local reception conditions, taking into consideration the distance from the broadcast station and possible interfering objects such as surrounding tall buildings. In locations where there is a strong signal from a local station, a portable T-type antenna is usually adequate. Connect the feeder wire to the 300Ω terminal, pull the wire tight, and turn to obtain optimum reception while watching the SIGNAL QUALITY/MULTIPATH meter. Attach the antenna to a suitable support such as a wall.

In all but the best reception conditions, an outdoor FM antenna is necessary for best results. Either 300Ω flat twin-lead wire or 75Ω coaxial cable may be used. In locations where electrical interference is a problem, coaxial cable is preferable.



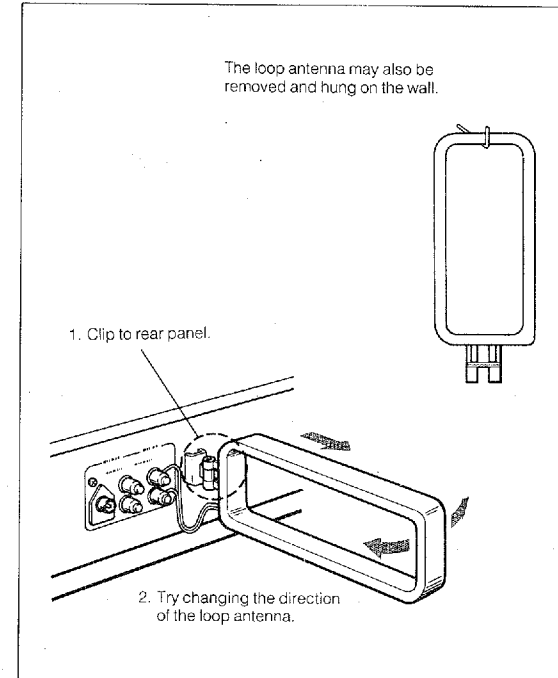
Attaching the plug to the coaxial cable



CONNECTING THE AM ANTENNA

In many cases it will be possible to get excellent AM reception with the provided AM loop antenna. Attach the antenna leads to the GND and AM ANT terminals, and rotate the antenna in its bracket for best reception while watching the SIGNAL QUALITY/MULTIPATH meter. The loop antenna may also be removed and hung on the wall.

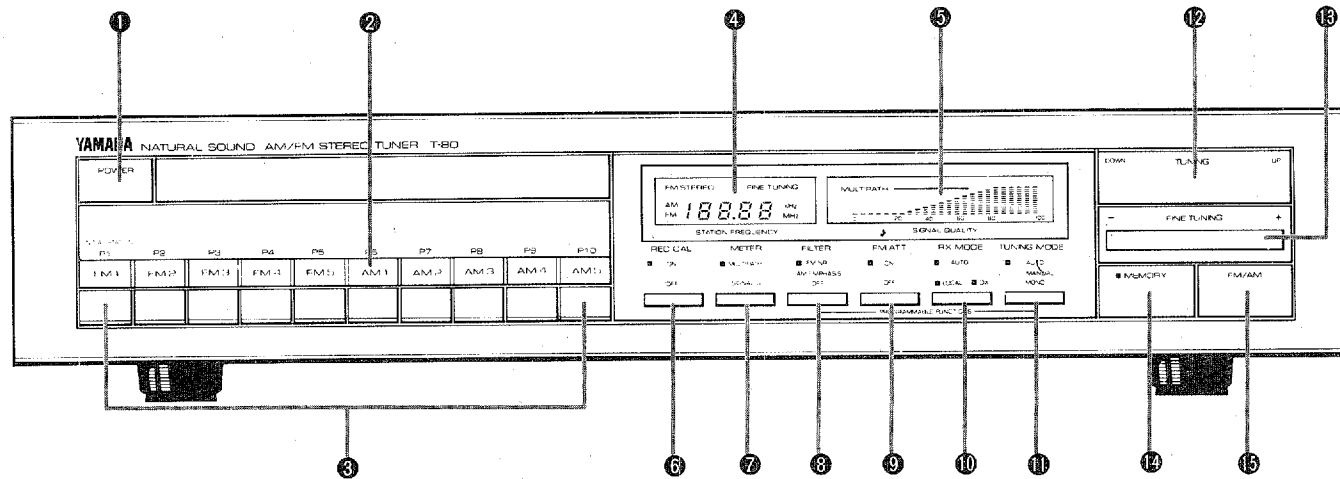
If necessary, an outdoor antenna may be used for improved AM reception. Connect a 5 – 10 meter length of insulated wire to the AM ANT terminal and run it outdoors.



CONNECTING THE AMPLIFIER

Use the cable supplied to connect from the output jacks to the tuner input jacks of your amplifier, being sure to observe the left and right channel markings. Also make sure that the connections are secure and that the connecting cable is not bundled with the speaker leads or power cord from the amplifier.

FRONT PANEL PARTS AND FUNCTIONS



1 POWER SWITCH

2 STATION INDICATION PANEL

When a preset button is pressed, the color of the corresponding indicator changes from red to yellow. During presetting, the indicator of the button pressed last will alternately flash red and yellow.

3 PRESET BUTTONS

A total (FM + AM) of 10 broadcast stations can be preset. They are preset to include the settings of the FILTER switch, FM ATT switch* and TUNING MODE switch (including FINE TUNING). Thereafter any station can be tuned to (in that preset mode) by one touch of the preset button. In addition, preset button P1 also includes the initial station function, so that the broadcast station preset to that button can be tuned by simply switching on the power by the POWER ON mode switch on the rear panel.

* The FM ATT switch and the RX MODE switch are effective during FM reception only.

4 FREQUENCY INDICATOR

• FM stereo indicator

This indicator illuminates only during FM stereo broadcasts, and not during monaural broadcasts. It also does not illuminate, even during a stereo broadcast, if the TUNING MODE switch is at the MANUAL/MONO position.

• Fine tuning indicator

Indicates that the tuning mode is fine tuning. The indication is up to 0.01 MHz for FM reception.

5 SIGNAL QUALITY/MULTIPATH METER

Indicates the quality of signals being received at the tuner. It also can be used to indicate the detection of multipath interference during reception of FM broadcasts by setting the switch to MULTIPATH (indicator illuminates).

6 RECORD-CALIBRATION SWITCH

When this switch is ON (indicator illuminates), a 333-Hz signal (corresponding to 50% FM modulation) is output. Adjust so that the indication of the tape deck's level meter is -6 VU to 0 VU.*

- * This switch has operational priority over all other switches.
- * Refer to the tape deck's operation instructions, because the recording level varies according to the type of tape used.

7 METER SWITCH

This switch functions only during reception of FM broadcasts. When it is set to MULTIPATH, the SIGNAL QUALITY/MULTIPATH meter will function as a multipath interference detection meter (MULTIPATH indicator illuminates). When the switch is pressed once again, the meter will once again function as the signal quality meter.

8 FILTER SWITCH

- During FM ... This switch functions as an FM noise-reduction switch. If noise is excessive, set to ON (indicator illuminates). Noise in stereo and monaural broadcasts can be reduced.

- During AM ... This switch functions as an AM emphasis switch. Reception conditions can be improved by setting to ON (indicator illuminates) during reception of pre-emphasized broadcasts, distant broadcasts, weak broadcasts, or broadcasts which are near the frequency of another broadcast.

To receive broadcasts which are not pre-emphasized and which have good reception, set this switch to OFF for optimum, wide-range reception.

* Note that the displayed value shown by the signal quality meter changes slightly as a result of ON/OFF switching of AM emphasis.

⑨ FM ATTENUATOR SWITCH

When this switch is ON (indicator illuminates) during FM reception, the antenna input can be attenuated by about 10 dB. This is effective in the following conditions.

- 1) If, during reception in the LOCAL mode, the signal quality meter reading is full scale, even with the FM ATT ON.
- 2) Reception conditions may be improved during reception of weak or medium-strength broadcasts, if there is a strong-signal broadcast on a nearby frequency, by receiving in the FM ATT ON condition.
- 3) If there is interference (radio interference, beat signals, etc.) caused by intermodulation, interference signals, etc.... Select the best position (ON or OFF). Otherwise, the OFF position is suggested. Note, however, that automatic search tuning will be faster if this switch is set to ON, especially if there are many broadcast stations, because the weak broadcast station will be by-passed. After completion of the tuning, however, the switch should once again be set to OFF.

⑩ RX MODE SWITCH

This switch is effective for improved reception of distant stations or noisy stations during FM reception.

Each time the switch is pressed, it changes in order from AUTO DX to compulsory DX to compulsory LOCAL, as indicated by the indicator.

• AUTO DX

When interference is not strong, the wide-range LOCAL mode is used for reception, but when the signal is weak or there is interference, there is an automatic switchover to the highly selective DX mode so that reception noise can be lessened.

There is no automatic return to the LOCAL mode even if the reception conditions improve. Either the broadcast should be detuned, or this switch should be pressed to the LOCAL position.

• Compulsory DX

Set to this mode to receive a distant broadcast station or if the broadcast signal becomes weak.

• Compulsory LOCAL

Set to this position if broadcast signals are strong and there is little interference, or if you wish to receive only strong-signal broadcast stations.

* The suggested usual setting is the AUTO DX mode.

⑪ TUNING MODE SWITCH

• AUTO position (indicator illuminates)

Tuning will automatically stop at a tuned frequency when the TUNING button is used for tuning. (This is automatic search tuning.) Moreover, the muting circuit functions to eliminate between-station noise during FM tuning.

In addition, stereo broadcasts are automatically tuned.

• MANUAL/MONO

When the TUNING button is pressed intermittently, the frequency is changed in 0.1-MHz (FM) or 10-kHz (AM) steps. (If the button is pressed continuously, the frequency is changed continuously in these gradual steps.)

Use the MANUAL setting when tuning is not satisfactory at the AUTO position because the station is distant or reception conditions are poor.

Note that, at this position, all FM broadcasts will be heard monaurally, (Automatic stereo reception is by switching to AUTO after tuning is completed.)

* Because the stereo operation level of this model is set to a low level, tuning of very weak signals can be improved by tuning manually.

The setting of the FILTER, FM ATT, RX MODE and TUNING MODE (FINE TUNING) switches can of course be programmed into the memory of the P1 - P10 preset buttons, and the initial station and last station can be recalled.

Usual settings are:

FILTER and FM ATT switches ... OFF

RX MODE and TUNING MODE switches ... AUTO

In this way, programmable functions can be entered into the preset button memories in the best condition.

⑫ TUNING BUTTON

The frequency displayed by the frequency indicator will become lower when the DOWN side is pressed, and higher when the UP side is pressed.

Tuning will be automatic search or manual depending upon the setting of the TUNING MODE switch.

⑬ FINE TUNING BUTTON

When this button is pressed, the words "FINE TUNING" will illuminate in the frequency indicator, and the FM frequency will be displayed to a precision of 0.01 MHz (= 10 kHz). Thus, FM tuning to a precision of 0.01 MHz is possible when the FINE TUNING button is pressed intermittently. For AM, 1-kHz step tuning will be possible. (The frequency can be continuously changed in steps of this width if the button is pressed continuously.) This button, then, can be used for even more precise tuning.

⑭ MEMORY BUTTON

This button is used to program the frequency to the preset buttons. When it is pressed, the indicator illuminates for about 4 seconds. During that time, the reception frequency and each mode will be simultaneously programmed into whichever of the preset buttons (P1 - P10) is pressed.

⑮ BAND SELECTOR

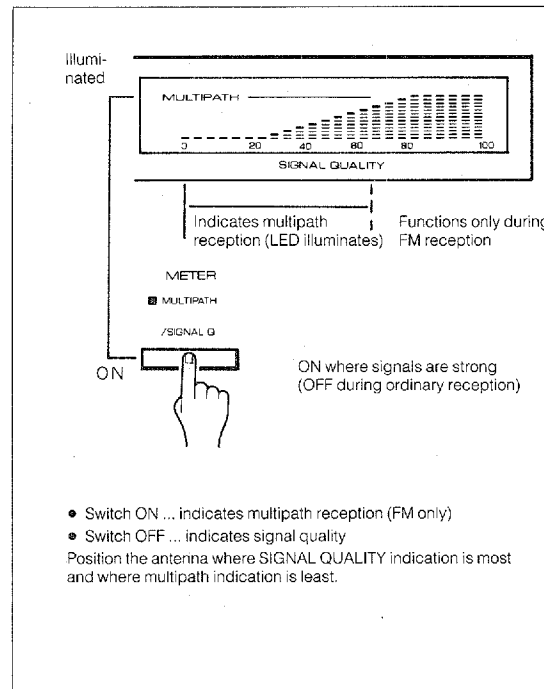
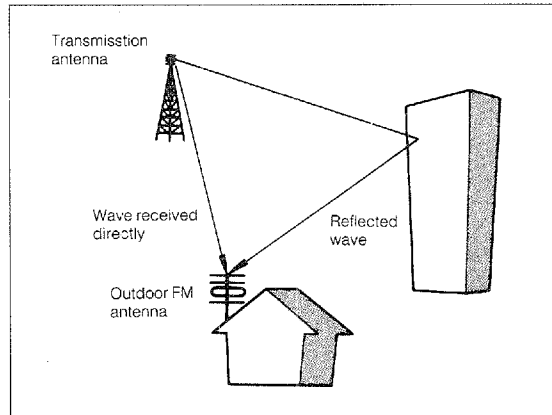
To select FM or AM reception.

* The most recently tuned broadcast station on the AM (FM) band will be received when the band is changed from FM to AM (AM to FM).

T-80

MULTIPATH/INTERFERENCE

- FM multipath reception is, in the same way as TV "ghosts", caused by the reception of the same signal (one directly from the broadcast station, and one indirectly very slightly afterward because it is reflected from a nearby building, mountains, etc.) as two signals, resulting in a worsened S/N ratio of the sound. To avoid this problem, an antenna with highly directional characteristics should be used, and its height and direction should be planned to prevent multi-path reception as much as possible.
- The SIGNAL QUALITY meter of this unit is designed to detect and indicate interference signals. When the METER switch is set to SIGNAL Q, the reception quality is indicated, but when it is set to MULTIPATH (indicator illuminates) during FM reception, the meter detects and indicates multipath interference. In an area of weak signals, the meter should mainly be used as a signal quality meter, and the antenna should be placed where the indicator is most illuminated. In an area of strong signals, the meter should mainly be used as a multipath meter, and the antenna located where the indicator is least illuminated. Because sound will be distorted when multipath reception is detected, it may be necessary to re-adjust the antenna direction, height, etc., and to replace the antenna with one which is more highly directional.



RECEIVING FM/AM BROADCASTS

MANUAL Tuning

Automatic search tuning may be impossible if the station signal is weak. If so, use manual tuning.

1. Set the band selector **(1)** (AM/FM).
2. Set the TUNING MODE switch **(2)** to MANUAL MONO.
3. Set the RX MODE switch **(3)** to AUTO or DX.
4. Set the FM ATT switch **(4)** and the FILTER switch **(5)** to OFF.
5. Use the TUNING button **(6)** to tune.

The frequency will change rapidly if the TUNING button is pressed continuously. Release it slightly before reaching the desired frequency, and then press it intermittently until the desired frequency is reached.
6. If the reception conditions are satisfactory when the TUNING MODE switch **(2)** is set to AUTO, return it to that position. (FM stereo broadcasts can be heard as stereo at this setting.)

AUTOMATIC SEARCH Tuning

If signals are strong and there is no interference, quick automatic search tuning is possible.

1. Set the band selector **(1)** (FM/AM).
2. Set the TUNING MODE switch **(2)** to AUTO.
3. Set the RX MODE switch **(3)** to AUTO or DX.
4. Set the FM ATT switch **(4)** and the FILTER switch **(5)** to OFF.
5. Use the TUNING button **(6)** to tune.

The tuning will be automatic, stopping at each broadcast station frequency.
6. If the station where tuning stops is not the one you want, press the TUNING button **(6)** once again.

* The tuning operation may not stop at all during automatic search tuning if an antenna is not connected, or if the unit is in a building or some other place where signal reception is weak. If this happens, change the TUNING MODE switch to MANUAL MONO and try again.

■ FINE Tuning

Rapid tuning is usually possible by the automatic search or manual tuning method, but more stabilized reception by fine tuning is possible as follows.

- (1) To receive a weak or very badly fading broadcast signal from among many signals
- (2) To receive a weak or medium-strength signal which is near a strong signal
- (3) If beat noise is received

In the above instances, manual tuning and then fine tuning can be used to reduce noise and distortion. The best reception can be easily obtained by using the signal quality meter during fine tuning.

* The optimum reception conditions obtained by fine tuning can be programmed into the memory of the preset buttons, both for FM and AM.

1. Set the band selector **(I)** (FM/AM).
2. Set the TUNING MODE switch **(G)** to AUTO or MANUAL MONO.
3. Set the RX MODE switch **(F)** to AUTO or DX.
4. Set the FM ATT switch **(E)** and the FILTER switch **(D)** to OFF.
5. First, tune by using the TUNING button **(K)**.
6. Next use the FINE TUNING button **(J)** to obtain the very best reception. (The frequency changes quickly if the button is pressed continuously.)

● Frequency display when changing from fine tuning to automatic or manual tuning ...

- (1) Automatic search tuning begins immediately when changing from fine tuning to automatic.
- (2) When changing from fine tuning to manual:
 - 1st press ...
 - FM ... rounded to nearest whole number
 - AM ... rounded to nearest whole number
 - 2nd and subsequent presses ...
 - FM ... 0.1 MHz steps
 - AM ... 10-kHz steps

■ PRESET Tuning

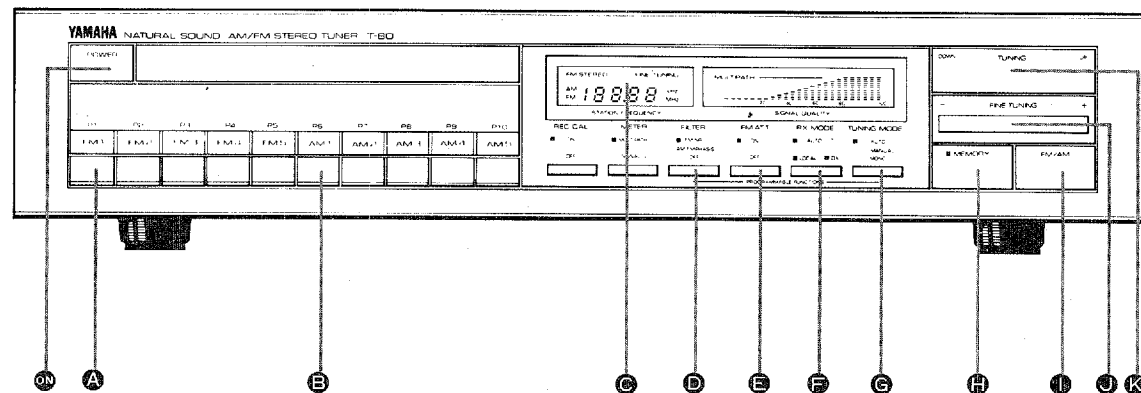
The preset button can be used to select, at a single touch, any desired station which has been preset by manual, automatic search or fine tuning.

To program the PRESET MEMORY

The following example is for an FM station to be programmed to preset button P1.

1. Set the band selector **(I)** to FM.
 2. Follow the tuning procedure **(K)** **(J)** **(C)** to tune to the FM frequency for that station.
 3. Set the FILTER **(D)**, FM ATT **(E)**, RX MODE **(F)** and TUNING MODE **(G)** switches according to the reception conditions.
 4. Press the MEMORY button **(H)** and then, while the indicator is illuminated, press the P1 preset button **(A)**.
(After the MEMORY indicator stops illuminating, the P1 indicator will change to yellow.)
 5. That FM station is now preset, including the reception mode conditions, to preset button P1. To confirm the setting, press some other preset button **(B)** and then press preset button P1. The frequency will be displayed and you can confirm that the reception mode is included.
- To continue programming other buttons, when the MEMORY button is pressed, the last preset button programmed (P1 in this case) will flash in red and yellow.

- AM stations can be programmed in the same way after the band selector is set to AM.
- In this way as many as 10 stations (total AM and FM) can be programmed for preset tuning.
- To change the setting for any button, follow the same procedure. The new setting will be programmed in place of the former one.

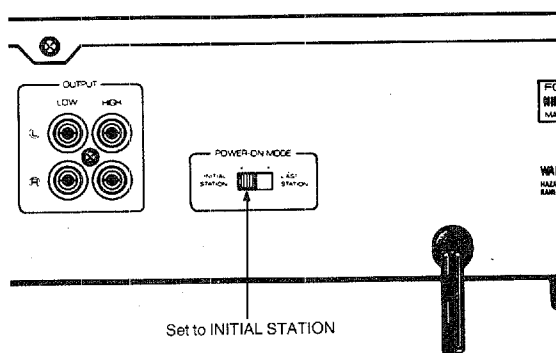


T-80

■ INITIAL STATION

By setting the most often listened to broadcast station to preset button P1, you can immediately hear that station first when the power is switched on. This feature is also useful for unattended taping and for wake-up programming.

1. Program your favorite station to P1, as described above. It then becomes the "initial station".
2. Set the POWER-ON MODE switch, on the rear panel, to INITIAL STATION.
3. To confirm, switch the power off and then on. The programmed frequency and reception modes should be displayed.
4. If the POWER-ON MODE switch is left at the LAST STATION position, the station received just before the power was switched off will be heard.



● Memory retention

The memory back-up circuit will prevent the programmed information from being lost even though the power is switched OFF for timer use or other temporary power cut-off. If, however, the unit is not used for a long time, the memory may be erased. If so, it can be re-programmed by simply following the original procedure.

SPECIFICATIONS

■ FM SECTION

| | |
|--|-------------------------|
| Tuning Range | 87.6 to 108 MHz |
| 50 dB Quieting Sensitivity (IHF) | |
| Mono | 1.6 μ V (15.3 dBf) |
| (NR ON) | 1.2 μ V (12.8 dBf) |
| Stereo | 20 μ V (37.2 dBf) |
| (NR ON) | 10 μ V (31.2 dBf) |
| Usable Sensitivity (IHF mono) | |
| (30 dB S/N Quieting) 75 Ω | 0.9 μ V (10.3 dBf) |
| Image Response Ratio | 95 dB |
| IF Response Ratio | 115 dB |
| Spurious Response Ratio | 110 dB |
| AM Suppression Ratio | 70 dB |
| Capture Ratio | |
| Local | 1.2 dB |
| Alternate Channel Selectivity (DX) | 85 dB |
| Adjacent Channel Selectivity | 20 dB |
| Signal-to-Noise Ratio (IHF) | |
| Mono | 94 dB |
| Stereo | 86 dB |
| Harmonic Distortion | |
| Mono: 100 Hz | DX 0.03 %, Local 0.02 % |
| 1 kHz | DX 0.15 %, Local 0.03 % |
| 6 kHz | DX 0.4 %, Local 0.06 % |
| Stereo: 100 Hz | DX 0.5 %, Local 0.04 % |
| 1 kHz | DX 0.5 %, Local 0.03 % |
| 6 kHz | DX 0.8 %, Local 0.07 % |
| Stereo Separation | |
| 50 Hz | Local 65 dB |
| 1 kHz | Local 65 dB |
| 10 kHz | Local 50 dB |
| Frequency Response | |
| 50 Hz to 10 kHz | +0.2, -0.3 dB |
| 20 Hz to 15 kHz | +0.2, -0.5 dB |
| Subcarrier Product Ratio | 65 dB |

■ AM SECTION

| | |
|------------------------------------|------------------|
| Tuning Range | 510 to 1,620 kHz |
| Usable Sensitivity | 250 μ V |
| Selectivity | 30 dB |
| Signal-to-Noise Ratio | 55 dB |
| Image Response Ratio | 40 dB |
| Spurious Response Ratio | 50 dB |
| Harmonic Distortion (400 Hz) | 0.2 % |

■ AUDIO SECTION

| | |
|---------------------------------|-----------------------|
| Output Level/Impedance (High) | |
| FM (100 % mod. 1 kHz) | 1 V/2 k Ω |
| AM (30 % mod. 400 Hz) | 0.3 V/2 k Ω |
| REC. CAL. Signal (333 Hz) | 0.5 V/2 k Ω |
| Output Level/Impedance (Low) | |
| FM (100 % mod. 1 kHz) | 0.5 V/2.5 k Ω |
| AM (100 % mod. 1 kHz) | 0.15 V/2.5 k Ω |
| REC. CAL. Signal (333 Hz) | 0.25 V/2.5 k Ω |

■ GENERAL

| | |
|------------------------------|--------------------------|
| Power Supply | 120 V, 60 Hz |
| Power Consumption | 13 W |
| Dimensions (W x H x D) | 435 x 93.5 x 357 mm |
| | (17-1/8" x 3-6/8" x 14") |
| Weight | 5 kg (11 lbs.) |

■ ACCESSORIES

| | |
|----------------------------------|---|
| ● FM T-type Antenna | 1 |
| ● Pin-Pin Cord | 1 |
| ● AM Loop Antenna | 1 |
| ● 75 Ω Coaxial Plug | 1 |
| ● Station Card | 1 |

Specifications subject to change without notice.

TROUBLESHOOTING

Before assuming that your tuner is faulty, check the following troubleshooting list which details corrective action you can take yourself without having to call a service engineer. If you have any doubts or questions, get in touch with your nearest Yamaha dealer.

| | Fault | Cause | Cure |
|--|---|--|---|
| FM | Occasional static-like noise. | Ignition noise from motorcycles or automobiles. | Install the antenna as high as possible and away from traffic; use coaxial cable. |
| | | Noise caused by a thermostat-controlled appliance. | Try installing a noise-prevention device to the appliance. |
| | Noise increases during stereo broadcasts. | Due to stereo broadcast characteristics, occurs far from station or if antenna input is weak. | Check the antenna connection. |
| | Automatic search tuning can't be done. | | Use an FM antenna. |
| | | | Try changing the direction of the FM antenna, or using one with more elements. |
| | | | Try setting the RX MODE switch to DX. |
| | FM STEREO indicator flashes irregularly; excessive noise. | Insufficient antenna input. | Try setting the FM ATT switch to OFF. |
| | | | Try manual or fine tuning. |
| | FM antenna is used but sound is distorted. | Incomplete tuning. | Use an antenna appropriate to the local field force; try setting the TUNING MODE switch to MANUAL/MONO. |
| | | | Try setting the FM ATT switch to OFF. |
| Left channel sound leaks to right channel during stereo test broadcast. | Multipath interference. | Replace the antenna with one of higher directionality, or install the antenna where it won't easily receive multipath signals. | |
| | | Compare right sound with left; normal if only slight. | |
| Stereo broadcasts can't be received as stereo. | The crosstalk phenomenon; normal if slight. | Try setting the FILTER switch to OFF. | |
| | | TUNING MODE switch set to MANUAL/MONO. | |
| Preset tuning can't be made. | Memory erased because not used for a long time. | Try setting the TUNING MODE switch to AUTO. | |
| AM | Insufficient sensitivity. | Weak signals, or incorrect connection or direction of antenna. | Reprogram the preset memory. |
| | Automatic search tuning can't be done. | | Try changing the direction of the AM loop antenna. |
| | | Continuous noises. | Noise caused by atmospheric static or lightning, or by fluorescent light, motor or thermostat-controlled appliance. |
| Can be reduced by using an outside AM antenna and grounding completely; complete elimination is difficult. | | | |
| Unusual high-pitch noises (especially at night). | Interference by adjacent frequency signals. | Try manual tuning. | |
| | | TV is being used nearby. | |
| | | | Try changing the direction of the AM loop antenna. |
| | | | Try separating this unit and the TV. |

